CLAIMS

1. A method for removing an acidic component contained in an exhaust gas comprising by using a system comprising (a) a gas-liquid contact apparatus composed of an absorption column provided internally with at least one perforated plate at the top, bottom, or both top and bottom of the absorption column packed with at least one type of fillers, (b) an apparatus for introducing seawater to the absorption column, (c) an apparatus for oxidizing the seawater after gas-liquid contact, and (d) an apparatus for mixing a noncontact seawater with the seawater after subjected to the mixing and oxidation, whereby the exhaust gas containing an acidic component is brought into gas-liquid contact with the seawater.

2. A wet method for removing an acidic component contained in an exhaust gas, in a gas-liquid contact apparatus including an absorption column having a column diameter of at least 500 mm and provided with at least one perforated plate having an free-space ratio Fc of 0.25 to 0.5 and provided with at least one type of packing material with a packing height of 0.5 m to 4 m, comprising

supplying seawater in such an amount that a ratio L/G of the flow rate L ($kg/m^2 \cdot hr$) of the seawater to the flow rate G ($kg/m^2 \cdot hr$) of the gas to be treated from the top of the column is at least 3.6 and a flow rate L of the seawater is 1×10^4 to 25×10^4 $kg/m^2 \cdot hr$ and introducing a treated gas in such an amount that a range of a superficial gas velocity Ug in the apparatus from the bottom of the gas-liquid contact apparatus is 0 to $2 \cdot Ugm$ (m/sec):

in the case of using a perforated or grid plate column without weir and downcomer composed of at least one perforated plate and the ratio ρ_G/ρ_L of the density ρ_G (kg/m^3) of the treated gas to the density ρ_L (kg/m^3) of seawater of 1030 is at least 0.838×10^{-3},

$$Ugm = 49.14\ Fc^{0.7}\ (\rho_G/\rho_L \times 10^{-3})^{-0.5} \cdot (L/G)^{-1/3} \cdot \sqrt{g \cdot L}$$

wherein L is a capillary constant $\sqrt{2\sigma/\rho_L \cdot g}$,

g is a gravitational acceleration (m/sec^2), and

σ is a surface tension of seawater (kg/sec^2)

whereby the gas to be treated and seawater are countercurrently brought into gas-liquid contact.